

WHAT IS CLAIMED IS:

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1. A method of inspecting the state of a large number of holes formed in a wafer sample by directing a charged-particle beam to the sample and obtaining resulting signals, said method comprising the steps of:

5 establishing measurement regions containing holes on the sample;

directing said charged-particle beam to the measurement regions on the sample containing the holes;

detecting an electrical current flowing between each of said measurement regions on the sample and ground;

10 finding data about a current distribution on the sample from detected values of electrical current; and

displaying a brightness-based map on a display unit according to said found data about the current distribution.

2. The method of claim 1, wherein size and positions of said measurement regions are so set that plural holes are present within each of said measurement regions.

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3. The method of claim 1, wherein the regions irradiated with said charged-particle beam are located in certain positions within periodic patterns formed on said sample.

4. The method of claim 1, wherein said charged-particle beam is scanned across each of said measurement regions, and wherein said electrical current is accumulated during scan and a resulting value is used as a measurement value derived from each measurement region.

5. The method of claim 1, wherein said charged-particle beam is scanned across each of said measurement regions, and wherein an average

value of said electrical current during the scanning period is used as a measurement value derived from each measurement region.

6. The method of claim 1, wherein each of said measurement regions is totally irradiated with said charged-particle beam for a given time in a static manner, and wherein said electrical current is accumulated during the given time and a resulting value is used as a measurement value derived from
5 each measurement region.

7. The method of claim 1, wherein each of said measurement regions is totally irradiated with said charged-particle beam for a given time in a static manner, and wherein an average value of said electrical current is used as a measurement value derived from each measurement region.

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